

Claim Amendments

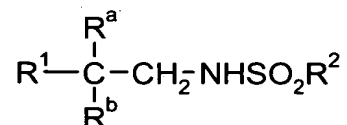
Please cancel claims 1-17.  
Please add new claims 18-29.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-17. (cancelled)

18. (new) A compound of the formula:



wherein:

$\text{R}^a$  and  $\text{R}^b$  together represent  $=\text{O}$  or  $=\text{CH}_2$ ;

$\text{R}^1$  represents a naphthyl which is unsubstituted or substituted by one or two substituents selected independently from halogen; nitro; cyano; hydroxyimino; (1-10C)alkyl; (2-10C)alkenyl; (2-10C)alkynyl; (3-8C)cycloalkyl; hydroxy(3-8C)cycloalkyl; oxo(3-8C)cycloalkyl; halo(1-10C)alkyl;  $(\text{CH}_2)_y\text{X}^1\text{R}^9$  in which  $y$  is 0 or an integer of from 1 to 4,  $\text{X}^1$  represents O, S,  $\text{NR}^{10}$ , CO, COO, OCO,  $\text{CONR}^{11}$ ,  $\text{NR}^{12}\text{CO}$ ,  $\text{NR}^{12}\text{COCOO}$  or  $\text{OCONR}^{13}$ ,  $\text{R}^9$  represents hydrogen, (1-10C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, pyrrolidinyl, tetrahydrofuryl, morpholino or (3-8C)cycloalkyl and  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$  and  $\text{R}^{13}$  each independently represents hydrogen or (1-10C)alkyl, or  $\text{R}^9$  and  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$  or  $\text{R}^{13}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; N-(1-4C)alkylpiperazinyl; N-phenyl(1-4C)alkylpiperazinyl; thienyl; furyl; oxazolyl; isoxazolyl; pyrazolyl; imidazolyl; thiazolyl; pyridyl; pyridazinyl; pyrimidinyl; dihydrothienyl; dihydrofuryl;

dihydrothiopyranyl; dihydropyranyl; dihydrothiazolyl; (1-4C)alkoxycarbonyldihydrothiazolyl; (1-4C)alkoxycarbonyldimethyldihydrothiazolyl; tetrahydro-thienyl; tetrahydrofuryl; tetrahydrothiopyranyl; tetrahydropyranyl; indolyl; benzofuryl; benzothienyl; benzimidazolyl; and a group of formula  $R^{14}-(L^a)_n-X^2-(L^b)_m$  in which  $X^2$  represents a bond, O, NH, S, SO, SO<sub>2</sub>, CO, CH(OH), CONH, NHCO, NHCONH, NHCOO, COCONH, OCH<sub>2</sub>CONH or CH=CH,  $L^a$  and  $L^b$  each represent (1-4C)alkylene, one of n and m is 0 or 1 and the other is 0, and  $R^{14}$  represents a phenyl or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, nitro, cyano, hydroxyimino, (1-10C) alkyl, (2-10C)alkenyl, (2-10C)alkynyl, (3-8C)-cycloalkyl, 4-(1,1-dioxotetrahydro-1,2-thiazinyl), halo(1-10C)alkyl, cyano(2-10C)alkenyl, phenyl, and  $(CH_2)_zX^3R^{15}$  in which z is 0 or an integer of from 1 to 4,  $X^3$  represents O, S,  $NR^{16}$ , CO, CH(OH), COO, OCO,  $CONR^{17}$ ,  $NR^{18}CO$ ,  $NHSO_2$ ,  $NHSO_2NR^{17}$ , NHCONH,  $ONR^{19}$  or  $NR^{19}COO$ ,  $R^{15}$  represents hydrogen, (1-10C)alkyl, phenyl(1-4C)alkyl, (1-10C)haloalkyl, (1-4C)alkoxycarbonyl(1-4C)alkyl, (1-4C)alkylsulfonylamino(1-4C)alkyl, (N-(1-4C)alkoxycarbonyl)(1-4C)alkylsulfonylamino-(1-4C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, (3-8C)-cycloalkyl, camphoryl or an aromatic or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, (1-4C)alkyl, halo(1-4C)alkyl, di(1-4C)alkylamino and (1-4C)alkoxy and  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$  and  $R^{19}$  each independently represents hydrogen or (1-10C)alkyl, or  $R^{15}$  and  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$  or  $R^{19}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; and

$R^2$  represents (1-6C)alkyl, (1-6C)fluoro-alkyl, (1-6C)chloroalkyl, (2-6C)alkenyl, or (1-4C)alkoxy(1-4C)alkyl; or a pharmaceutically acceptable salt thereof.

19. (new) A compound according to Claim 18 wherein R<sup>2</sup> represents (1-6C)alkyl, (1-6C)fluoroalkyl or (2-6C)alkenyl.

20. (new) A compound as claimed in Claim 19, wherein R<sup>2</sup> represents methyl, ethyl, propyl, 2-propyl, butyl, 2-methylpropyl, trifluoromethyl, 2,2,2-trifluoroethyl, chloromethyl, ethenyl, prop-2-enyl or methoxyethyl.

21. (new) A compound as claimed in Claim 20, wherein R<sup>2</sup> represents ethyl or 2-propyl.

22. (new) A compound as claimed in Claim 21, wherein R<sup>2</sup> represents 2-propyl.

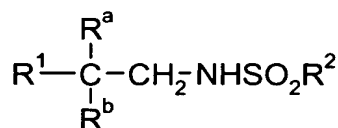
23. (new) A compound as claimed in claim 21, wherein R<sup>1</sup> represents 2-naphthyl.

24. (new) A compound according to claim 18 wherein R<sup>a</sup> and R<sup>b</sup> together represent =O;

25. (new) A compound according to claim 18 wherein R<sup>a</sup> and R<sup>b</sup> together represent =CH<sub>2</sub>;

26. (new) A pharmaceutical composition, which comprises a compound as claimed in Claim 18 and a pharmaceutically acceptable diluent or carrier.

27. (new) A method of potentiating glutamate receptor function in a mammal requiring such treatment, which comprises administering an effective amount of a compound of formula:



wherein:

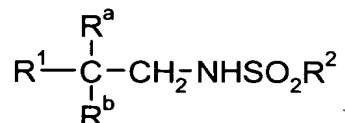
$R^a$  and  $R^b$  together represent  $=O$  or  $=CH_2$ ;

$R^1$  represents a naphthyl which is unsubstituted or substituted by one or two substituents selected independently from halogen; nitro; cyano; hydroxyimino; (1-10C)alkyl; (2-10C)alkenyl; (2-10C)alkynyl; (3-8C)cycloalkyl; hydroxy(3-8C)cycloalkyl; oxo(3-8C)cycloalkyl; halo(1-10C)alkyl;  $(CH_2)_yX^1R^9$  in which  $y$  is 0 or an integer of from 1 to 4,  $X^1$  represents O, S,  $NR^{10}$ , CO, COO, OCO,  $CONR^{11}$ ,  $NR^{12}CO$ ,  $NR^{12}COCOO$  or  $OCOR^{13}$ ,  $R^9$  represents hydrogen, (1-10C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, pyrrolidinyl, tetrahydrofuryl, morpholino or (3-8C)cycloalkyl and  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  each independently represents hydrogen or (1-10C)alkyl, or  $R^9$  and  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  or  $R^{13}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; N-(1-4C)alkylpiperazinyl; N-phenyl(1-4C)alkylpiperazinyl; thienyl; furyl; oxazolyl; isoxazolyl; pyrazolyl; imidazolyl; thiazolyl; pyridyl; pyridazinyl; pyrimidinyl; dihydrothienyl; dihydrofuryl; dihydrothiopyranyl; dihydropyranyl; dihydrothiazolyl; (1-4C)alkoxycarbonyldihydrothiazolyl; (1-4C)alkoxycarbonyldimethyldihydrothiazolyl; tetrahydro-thienyl; tetrahydrofuryl; tetrahydrothiopyranyl; tetrahydropyranyl; indolyl; benzofuryl; benzothienyl; benzimidazolyl; and a group of formula  $R^{14}-(L^a)_n-X^2-(L^b)_m$  in which  $X^2$  represents a bond, O, NH, S, SO,  $SO_2$ , CO,  $CH(OH)$ , CONH, NHCO, NHCONH, NHCOO, COCONH,  $OCH_2CONH$  or  $CH=CH$ ,  $L^a$  and  $L^b$  each represent (1-4C)alkylene, one of  $n$  and  $m$  is 0 or 1 and the other is 0, and  $R^{14}$  represents a phenyl or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, nitro, cyano, hydroxyimino, (1-10C) alkyl, (2-10C)alkenyl, (2-10C)alkynyl, (3-8C)-cycloalkyl, 4-(1,1-dioxotetrahydro-1,2-thiazinyl), halo(1-10C)alkyl, cyano(2-10C)alkenyl, phenyl, and

$(\text{CH}_2)_z\text{X}^3\text{R}^{15}$  in which  $z$  is 0 or an integer of from 1 to 4,  $\text{X}^3$  represents O, S,  $\text{NR}^{16}$ , CO,  $\text{CH}(\text{OH})$ , COO, OCO,  $\text{CONR}^{17}$ ,  $\text{NR}^{18}\text{CO}$ ,  $\text{NHSO}_2$ ,  $\text{NHSO}_2\text{NR}^{17}$ ,  $\text{NHCONH}$ ,  $\text{OCONR}^{19}$  or  $\text{NR}^{19}\text{COO}$ ,  $\text{R}^{15}$  represents hydrogen, (1-10C)alkyl, phenyl(1-4C)alkyl, (1-10C)haloalkyl, (1-4C)alkoxycarbonyl(1-4C)alkyl, (1-4C)alkylsulfonylamino(1-4C)alkyl, (N-(1-4C)alkoxycarbonyl)(1-4C)alkylsulfonylamino-(1-4C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, (3-8C)-cycloalkyl, camphoryl or an aromatic or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, (1-4C)alkyl, halo(1-4C)alkyl, di(1-4C)alkylamino and (1-4C)alkoxy and  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$  and  $\text{R}^{19}$  each independently represents hydrogen or (1-10C)alkyl, or  $\text{R}^{15}$  and  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$  or  $\text{R}^{19}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; and

$\text{R}^2$  represents (1-6C)alkyl, (1-6C)fluoro-alkyl, (1-6C)chloroalkyl, (2-6C)alkenyl, or (1-4C)alkoxy(1-4C)alkyl; or a pharmaceutically acceptable salt thereof.

28. (new) A method of treating a cognitive disorder; a neuro-degenerative disorder; age-related dementia; age-induced memory impairment; movement disorder; reversal of a drug-induced state; depression; attention deficit disorder; attention deficit hyperactivity disorder; psychosis; cognitive deficits associated with psychosis; or drug-induced psychosis in a patient, which comprises administering to a patient in need thereof an effective amount of a compound of formula:



wherein:

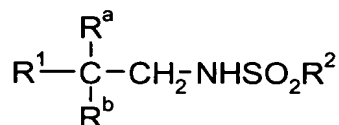
$\text{R}^a$  and  $\text{R}^b$  together represent =O or =CH<sub>2</sub>;

$R^1$  represents a naphthyl which is unsubstituted or substituted by one or two substituents selected independently from halogen; nitro; cyano; hydroxyimino; (1-10C)alkyl; (2-10C)alkenyl; (2-10C)alkynyl; (3-8C)cycloalkyl; hydroxy(3-8C)cycloalkyl; oxo(3-8C)cycloalkyl; halo(1-10C)alkyl;  $(CH_2)_yX^1R^9$  in which  $y$  is 0 or an integer of from 1 to 4,  $X^1$  represents O, S,  $NR^{10}$ , CO, COO, OCO,  $CONR^{11}$ ,  $NR^{12}CO$ ,  $NR^{12}COCOO$  or  $OCOR^{13}$ ,  $R^9$  represents hydrogen, (1-10C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, pyrrolidinyl, tetrahydrofuryl, morpholino or (3-8C)cycloalkyl and  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  each independently represents hydrogen or (1-10C)alkyl, or  $R^9$  and  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  or  $R^{13}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; N-(1-4C)alkylpiperazinyl; N-phenyl(1-4C)alkylpiperazinyl; thienyl; furyl; oxazolyl; isoxazolyl; pyrazolyl; imidazolyl; thiazolyl; pyridyl; pyridazinyl; pyrimidinyl; dihydrothienyl; dihydrofuryl; dihydrothiopyranyl; dihydropyranyl; dihydrothiazolyl; (1-4C)alkoxycarbonyldihydrothiazolyl; (1-4C)alkoxycarbonyldimethyldihydrothiazolyl; tetrahydro-thienyl; tetrahydrofuryl; tetrahydrothiopyranyl; tetrahydropyranyl; indolyl; benzofuryl; benzothienyl; benzimidazolyl; and a group of formula  $R^{14}-(L^a)_n-X^2-(L^b)_m$  in which  $X^2$  represents a bond, O, NH, S, SO,  $SO_2$ , CO,  $CH(OH)$ , CONH, NHCO, NHCONH, NHCOO, COCONH,  $OCH_2CONH$  or  $CH=CH$ ,  $L^a$  and  $L^b$  each represent (1-4C)alkylene, one of  $n$  and  $m$  is 0 or 1 and the other is 0, and  $R^{14}$  represents a phenyl or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, nitro, cyano, hydroxyimino, (1-10C) alkyl, (2-10C)alkenyl, (2-10C)alkynyl, (3-8C)-cycloalkyl, 4-(1,1-dioxotetrahydro-1,2-thiazinyl), halo(1-10C)alkyl, cyano(2-10C)alkenyl, phenyl, and  $(CH_2)_zX^3R^{15}$  in which  $z$  is 0 or an integer of from 1 to 4,  $X^3$  represents O, S,  $NR^{16}$ , CO,  $CH(OH)$ , COO, OCO,  $CONR^{17}$ ,  $NR^{18}CO$ ,

NHSO<sub>2</sub>, NHSO<sub>2</sub>NR<sup>17</sup>, NHCONH, OCONR<sup>19</sup> or NR<sup>19</sup>COO, R<sup>15</sup> represents hydrogen, (1-10C)alkyl, phenyl(1-4C)alkyl, (1-10C)haloalkyl, (1-4C)alkoxycarbonyl(1-4C)alkyl, (1-4C)alkylsulfonylamino(1-4C)alkyl, (N-(1-4C)alkoxycarbonyl)(1-4C)alkylsulfonylamino-(1-4C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, (3-8C)-cycloalkyl, camphoryl or an aromatic or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, (1-4C)alkyl, halo(1-4C)alkyl, di(1-4C)alkylamino and (1-4C)alkoxy and R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup> and R<sup>19</sup> each independently represents hydrogen or (1-10C)alkyl, or R<sup>15</sup> and R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup> or R<sup>19</sup> together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; and

R<sup>2</sup> represents (1-6C)alkyl, (1-6C)fluoro-alkyl, (1-6C)chloroalkyl, (2-6C)alkenyl, or (1-4C)alkoxy(1-4C)alkyl; or a pharmaceutically acceptable salt thereof.

29. (new) A method for improving memory or learning ability in a patient, which comprises administering to a patient in need thereof an effective amount of a compound of formula:



wherein:

R<sup>a</sup> and R<sup>b</sup> together represent =O or =CH<sub>2</sub>;

R<sup>1</sup> represents a naphthyl which is unsubstituted or substituted by one or two substituents selected independently from halogen; nitro; cyano; hydroxyimino; (1-10C)alkyl; (2-10C)alkenyl; (2-10C)alkynyl; (3-8C)cycloalkyl; hydroxy(3-8C)cycloalkyl; oxo(3-8C)cycloalkyl; halo(1-10C)alkyl; (CH<sub>2</sub>)<sub>y</sub>X<sup>1</sup>R<sup>9</sup> in which y is 0 or an integer of from 1 to 4, X<sup>1</sup>

represents O, S,  $\text{NR}^{10}$ , CO, COO, OCO,  $\text{CONR}^{11}$ ,  $\text{NR}^{12}\text{CO}$ ,  $\text{NR}^{12}\text{COCOO}$  or  $\text{OCONR}^{13}$ ,  $\text{R}^9$  represents hydrogen, (1-10C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, pyrrolidinyl, tetrahydrofuryl, morpholino or (3-8C)cycloalkyl and  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$  and  $\text{R}^{13}$  each independently represents hydrogen or (1-10C)alkyl, or  $\text{R}^9$  and  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$  or  $\text{R}^{13}$  together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; N-(1-4C)alkylpiperazinyl; N-phenyl(1-4C)alkylpiperazinyl; thienyl; furyl; oxazolyl; isoxazolyl; pyrazolyl; imidazolyl; thiazolyl; pyridyl; pyridazinyl; pyrimidinyl; dihydrothienyl; dihydrofuryl; dihydrothiopyranyl; dihydropyranyl; dihydrothiazolyl; (1-4C)alkoxycarbonyldihydrothiazolyl; (1-4C)alkoxycarbonyldimethyldihydrothiazolyl; tetrahydro-thienyl; tetrahydrofuryl; tetrahydrothiopyranyl; tetrahydropyranyl; indolyl; benzofuryl; benzothienyl; benzimidazolyl; and a group of formula  $\text{R}^{14}-(\text{L}^a)_n-\text{X}^2-(\text{L}^b)_m$  in which  $\text{X}^2$  represents a bond, O, NH, S, SO,  $\text{SO}_2$ , CO,  $\text{CH}(\text{OH})$ , CONH, NHCO, NHCONH, NHCOO, COCONH,  $\text{OCH}_2\text{CONH}$  or  $\text{CH}=\text{CH}$ ,  $\text{L}^a$  and  $\text{L}^b$  each represent (1-4C)alkylene, one of n and m is 0 or 1 and the other is 0, and  $\text{R}^{14}$  represents a phenyl or heteroaromatic group which is unsubstituted or substituted by one or two of halogen, nitro, cyano, hydroxyimino, (1-10C) alkyl, (2-10C)alkenyl, (2-10C)alkynyl, (3-8C)-cycloalkyl, 4-(1,1-dioxotetrahydro-1,2-thiazinyl), halo(1-10C)alkyl, cyano(2-10C)alkenyl, phenyl, and  $(\text{CH}_2)_z\text{X}^3\text{R}^{15}$  in which z is 0 or an integer of from 1 to 4,  $\text{X}^3$  represents O, S,  $\text{NR}^{16}$ , CO,  $\text{CH}(\text{OH})$ , COO, OCO,  $\text{CONR}^{17}$ ,  $\text{NR}^{18}\text{CO}$ ,  $\text{NH}\text{SO}_2$ ,  $\text{NH}\text{SO}_2\text{NR}^{17}$ , NHCONH,  $\text{OCONR}^{19}$  or  $\text{NR}^{19}\text{COO}$ ,  $\text{R}^{15}$  represents hydrogen, (1-10C)alkyl, phenyl(1-4C)alkyl, (1-10C)haloalkyl, (1-4C)alkoxycarbonyl(1-4C)alkyl, (1-4C)alkylsulfonylamino(1-4C)alkyl, (N-(1-4C)alkoxycarbonyl)(1-4C)alkylsulfonylamino-(1-4C)alkyl, (3-10C)alkenyl, (3-10C)alkynyl, (3-8C)-cycloalkyl, camphoryl or an aromatic or heteroaromatic group which is



unsubstituted or substituted by one or two of halogen, (1-4C)alkyl, halo(1-4C)alkyl, di(1-4C)alkylamino and (1-4C)alkoxy and R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup> and R<sup>19</sup> each independently represents hydrogen or (1-10C)alkyl, or R<sup>15</sup> and R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup> or R<sup>19</sup> together with the nitrogen atom to which they are attached form an azetidiny, pyrrolidinyl, piperidinyl or morpholino group; and

R<sup>2</sup> represents (1-6C)alkyl, (1-6C)fluoro-alkyl, (1-6C)chloroalkyl, (2-6C)alkenyl, or (1-4C)alkoxy(1-4C)alkyl; or a pharmaceutically acceptable salt thereof.